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ABSTRACT

These four papers are from a symposium facilitated by David Antonioni on the transfer of learning at the 1995 Academy of Human Resource Development (HRD) conference. "Supervisory Support as a Transfer Enhancing Activity: Synthesis of Four Research Projects" (Esther W. M. Gielen, Marcel R. van der Klink) presents four case studies that show, with one exception, no direct effect of supervisory support on transfer of training. "Transfer of Training: The Impact of Supervisory Support Supervisory Involvement, Situational Constraints, and Self-Efficacy on the Application of Technical Skills Training" (Sandra L. Hastings, Barry G. Sheckley, Anne B. Nichols) examines supervisory support, supervisory involvement, situational constraints, and self-efficacy as factors that may expand the understanding of long-term transfer of training. "Factors in the Organizational Climate that Motivate the Trainee to Transfer Behavior Learned in a Training Setting to the Actual Work Environment" (Gary D. Geroy, Catherine J. Penna) examines the relationship between transfer behavior motivation and the organizational climate. "Management Influence on the Transfer of Training" (Emma Martien Branderhorst, Ida Wognum) used a control group-treatment study to show doubt about the results of recent studies that indicate that supervisors are the most important factor in training transfer. (KC)

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Supervisory Support as a Transfer Enhancing Activity: Synthesis of Four Research Papers
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Transfer of Training: The Impact of Supervisory Support, Supervisory Involvement, Situational Constraints, and Self-Efficacy on the Application of Technical Skill Training
Sandra L. Hastings, Connecticut Department of Labor
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Factors in the Organizational Climate that Motivate the Transfer of Training
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Supervisory Support as a Transfer Enhancing Activity: Synthesis of Four Research Projects

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Supervisory support is perceived as a major condition for enhancing transfer of training. However, research underpinning this conclusion is scarce. In this paper four case-studies are presented wherein the impact of supervisory support on trainees' transfer was investigated. Supervisory activities appear to exist in many variations, but effects are not clear. With one exception, the cases showed no direct effect existed between supervisory support and trainees' transfer.

During the last decade the importance of training effectiveness is frequently stressed as a corporate training issue (Wexley, 1984; Baldwin & Ford, 1988; Ford, 1990; Laker, 1990; Noe & Ford, 1992). In general, training is considered effective when trainees are able to apply knowledge, skills, and attitudes gained from training on the job. Often, this transfer from the training site to the job situation is regarded insufficient (Wexley, 1988). In their review Baldwin and Ford (1988) identified three categories of factors that may impact training effectiveness: trainee characteristics, training design, and work environment characteristics. In the latter category research focuses on factors that either inhibit or improve transfer of training (eg. opportunity to use, work groups, organizational climate). Several authors highlighted aspects of the supervisor' role in creating a work environment that enhance trainees' performance (Broad, 1982; Robinson & Robinson, 1989). However the number of empirical based studies is limited.

Becker and Klimoski (1989) investigated the relationship between the organizational feedback environment and employees' performance. They distinguished three sources of feedback: organization/supervisor, co-workers and self/task and two types of feedback: positive and negative. The results of their study revealed that feedback from the organization/supervisor is more highly related to performance than other sources. Further, the authors found that negative organization/supervisor feedback is related to lower performance and positive organization/supervisor feedback is related to higher performance. Nevertheless, Becker and Klimoski remained very cautious in their conclusions since their data did not exclude a reciprocal relation between feedback and performance. Although the authors stressed the importance of the supervisor's role this does not mean employees value their supervisors' feedback. Herold, Liden, and Leatherwood (1987) carried out research in two organizations and found that employees prefer self-feedback and task feedback above supervisory feedback.

Graham, Wedman, and Garvin-Kester (1993; 1994) focused on 'the manager as coach'. The authors defined eight coaching skills and they conducted a study to determine whether these skills can be learned in a program. Before and after the program the managers' employees were interviewed to rate the coaching skills of their managers. After the program for five of the eight coaching skills a positive change was observed by the managers' employees. These were: (1) communicating clear performance objectives; (2) providing regular performance feedback; (3) considering all relevant information when appraising performance; (4) observing performance with clients; and (5) recognizing and rewarding high performance. The most important conclusions drawn from their work is that coaching skills can be developed but that on-the-job application of the skills is not guaranteed (1993, p.12). Further, the impact of supervisors depends on the span of control. Managers who supervised

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eight or fewer account representatives obtained more benefit of the coaching skills program. Of course these specific coaching behaviors vary with organizational culture and employees' expectations.

Knowing that the supervisory support activities can be very diverse and effects are variable it is interesting to examine the content of supervisory support and it's effect in different organizational contexts. This paper summarizes the results of four studies focusing on the supervisor's role in enhancing transfer of training of employees. Two research questions are formulated: (a) What support activities are undertaken by the supervisor in order to improve transfer of training? and (b) How does supervisory support effect trainees' performance?

Methodology

Four recent case-studies have been selected. Criteria for selection of the research projects were whether in the project empirical data was collected with regard to supervisory support and performance of trainees before and after the training event. For the selected cases secondary analyses have been carried out. This consisted of close inspection of the used items, inspection of the Cronbach's alphas, eventually computing new variables, comparison of means of the groups (in cases of a design with a control and experimental group), and analysis of variance. First method and results of each case are described and discussed. Then the general results are discussed and the research questions are addressed.

Case 1

Method. Branderhorst (1994) carried out an experiment in an oil company. Thirty front-line employees of diverse departments were trained in the use of strategies to analyze and solve problems. The trainees of the experimental and the control condition were assigned equally to two training groups with different trainers. So every training group consisted of trainees of the experimental and control condition. In total the experimental condition consisted of fourteen trainees and in the control condition sixteen trainees were involved. In the experimental condition the following supervisory support activities were implemented:

- Before the training the trainees' supervisor received a short description of the training content and he discussed the forthcoming training with his employee.
- During the training the supervisor informed the colleagues of the trainee.
- After the training the supervisor spoke with the trainee about the application of the training content in the trainee's actual job situation.

Data were collected with three questionnaires for the trainees at the first day of the training (prior work behavior with regard to dealing with problems), at the last day of the training (intentions to transfer) and at seven weeks after the training (actual transfer and received supervisory support). The trainees' supervisors filled in a short questionnaire about their support. Further, with five trainees of both conditions interviews were carried out in order to collect some additional in-depth data.

Results. The first step of the secondary analysis consisted of the creation of variables other than used in the original study, the calculation of their Cronbach's alphas and their means for the entire group of trainees (see Table 1). Although the trainees were at random assigned to the conditions the scores at the variable 'prior work behavior' differed significantly. A Mann-Whitney Test showed that the control group had a significant higher score (M=17.00 versus M=10.25, two-tailed p .03). The variable 'prior work behavior' measured the use of strategies to deal with problems prior to the training. The items used to measure this variable were not comparable with the items used to measure the transfer intentions and the actual transfer. Therefore a comparison between the latter two variables and 'prior work behavior' is not carried out.

Identical items were used to measure transfer intentions and the actual transfer. The items were grouped into four variables that conceptualized the four topics of the training program. As

found on test scores or the perception of support activities between the groups. From this can be concluded that no additional effect was caused by being in the experiment: eg. supervisors and trainees were not 'trying harder' when they were in the treatment group (Hawthorne effect). Consequently the results below are valid for the entire group of respondents.

Before and after the training the trainees' perception of the support and feedback activities of their supervisor were measured. Before the training only 29% of the supervisors discussed the objectives, content and expectancies, and only 25% made any arrangement with the trainee for this training on when and where (at home or in work hours) to study. During the training, the supervisor provided for an appropriate training environment for the trainee (57%), but is not involved in the trainee's questions, problems or the progress (60%). Furthermore, the supervisors did not know what the training was about (71%), did not comment the trainee's performance (68%), and the trainees stated that when they had questions, they preferred to consult colleagues. Altogether, it appears that the supportive activities of the trainees' supervisor are very superficial: related to the conditional aspects of the training and not related to the content.

Hence, the mean score for the supervisory support during and after the training is mediocre to slightly negative (3.03 and 2.51). Interesting is that the supervisors value their own behavior higher than their employees did (3.77 and 3.44). The same occurred with the feedback activities. In Table 3 the scores and measures for internal consistency (Cronbach's alpha) are summarized.

Table 3. Mean and reliability for two tests, support and feedback

Variables		Mean (%)		alpha	
Posttest		26.7 (89%)		-	
Transfer test		88.2 (73%)		-	
		during	after	during	after
Support*:	received	3.03	2.51	.80	.92
	provided	3.77	3.44	.69	.42
Feedback*:	received	2.97	2.86	.57	.88
	provided	-	3.45	-	.56

* Variables were measured with five point scales

When the differences between banks were analyzed, it appeared that perception of the supervisory support during training and after training varied significantly over the banks (F 3.32, df 23, p .0001; F 1.85, df 25, p .025). However, it was not evident in which direction the differences did occur, so nothing could be concluded on the effect of the bank's size or environment (rural vs urban).

The effects of the supervisors activities were very low: performance was not influenced positively or negatively by the (lack of) support. But support and feedback are related with job involvement (r .16, r -.17 respectively), and job involvement correlated positively with the transfer test and self-efficacy of performing relevant tasks. Based on this information, regression analysis was performed. Again no direct influence of support or feedback activities on performance were shown. However, job involvement was strongly effected by support (beta .22, p .02) and feedback (beta -.25, p .01). In turn job involvement effected self-efficacy (beta .42, p <.00005), and self-efficacy effected the trainee's performance as rated by the supervisor (beta .38, p .001).

It seems that when a supervisor shows interest, the trainee is likely to think: 'When my supervisor is concerned with this training, it probably is important or necessary'. Consequently the trainee's motivation to learn and motivation to transfer will be higher, and learns more from training. This causes a higher self-efficacy and job involvement, that can ultimately manifest in better performance.

weeks. But the supervisor can also wait and see if the employees report any problems or difficulties with their work. Another attitude is that the supervisor thinks it is not is job to know what happens on the workplace, but his assistance's. The proportion of the group that stated their supervisor executed that particular activity is presented in Table 5. Furthermore, the total group mechanics and the group of supervisors are compared with the Pearson's chi-square or the Fisher's Exact Test. The activities that are rated differently at a significance level $p < .05$ are indicated.

Due to the anonymity of the trainees for the transfer questionnaire it was not possible to calculate any effect of the supervisory activities on the trainees' performance.

Table 5. Support, and activities for three groups of mechanics and their supervisors

Variables	Mechanics				Super-visor
	Group 1 (n=60)	Group 2 (n=20)	Group 3 (n=24)	Total (n=104)	(n=10)
Support[a]	2.53	2.76	3.00	2.68	
Activities	(%)	(%)	(%)	(%)	(%)
-work site visit	24	24	52	20[b]	70
-performance appraisal	55	14	32	21	40
-corridor chat	51	11	37	34[b]	90
-asks whether problems occurred	63	5	32	18[b]	50
-discusses tasks on regular basis	35	19	46	25	30
-only reacts to occurring problems	62	17	21	50[b]	10
-responsibility assistant	55	25	20	42	20

[a]: 3 items on five-point scale
[b]: difference between two groups significant ($p<.05$)

General Results

In all cases the trainees can be described as front-line employees. In two cases interventions were scheduled to stimulate supervisors to show certain behavior that enhance trainees' performance (Branderhorst, 1994; Nauta, 1994). In the other two cases the regular procedures in the organization were followed and the degree of supportive activities was measured (Gielen, 1994; Leeninga, 1994).

Actual support activities. In Branderhorst's study the scheduled supervisory activities were threefold. Before training supervisors received a description of the training content and discussion with future trainees was planned. During training the supervisor had to inform the trainees' colleagues. After the training a discussion with the trainee was planned to discuss application of the learned skills. In the case of Nauta trainees developed an action plan during training and discussed this plan with their supervisor afterwards. Supervisors were informed by a letter of the Training Department to held a discussion about with the trainees. This letter provided guidelines for the content of the discussion. In the cases of Gielen and Leeninga no activities were scheduled. Activities were only undertaken by a minority of supervisors. In both studies the supervisory activities can be defined as rather superficial.

In all four cases the same pattern with regard to supervisory support is manifest. Trainees assess the support lower than their supervisors do. The question remains how to interpret these scores. Reflect those scores the actual support as perceived or as provided? Or are these scores an utterance of subjects' private interpretations?

Effects of support activities. The four studies present hardly any evidence for the idea that the supervisor is an important factor to enhance trainees' transfer. In Nauta's study no effect at all was observed. In the case of Branderhorst (1994) only for one of the four topics of the training program a relation occurred between the actual transfer and the support as perceived by the trainees. Due to the

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anonymity of the trainees it was not possible to calculate any relation between actual transfer and supervisory support in the research project of Leeninga (1994). In Gielen's project an indirect relation was found between transfer and supervisory support. It turned out that supervisory support and supervisor's feedback effected trainee's job involvement. Job involvement effected self-efficacy and this latter variable is related to trainee's performance as rated by the supervisor.

Although the amount of evidence for the supervisor as a important factor is limited, the projects of Nauta and Branderhorst show that it is possible to influence supervisors' support behaviors. Both projects provide evidence that interventions initiated by the training department result in actual adjusting of supervisors' behavior. For the case of transfer enhancement this can be explained as an important point.

Conclusion and Discussion

Although no convincing evidence was found that supervisory support directly contributes to trainees' performance, the conclusion that supervisory support does not matter at all is not our's. The arguments for our point of view are twofold. A first argument is already presented in the former section: when direct links are absent, indirect links could be existing. The second argument relates to the content and the presentation of the supervisory interventions. We suppose that more powerful programs of supervisory support, more powerful than applied in the research projects, are required to promote transfer. The success of those programs relies on the supervisors skills and knowledge what activities to undertake in what time schedule. Therefore training of supervisors and coaching by HRD professionals in exhibiting transfer enhancing behavior is a major condition for the appearance of transfer of trainees.

Consequently we suppose that more comprehensive transfer enhancing programs in the workplace are necessary. In both cases where treatments were carried out, the supervisory interventions were limited to one or two activities. A more optimal set of interventions derived from various transfer promoting factors is therefore required. Or in other terms: it is not only important to improve the supervisor's contribution to transfer but also to take into account all other factors to create an optimal setting. In order to obtain those settings a thorough overview of relevant workplace factors is needed and can be achieved with the use of a work environment assessment (Robinson & Robinson, 1985). Based on such assessment, decisions should be made concerning supervisory support, support of colleagues and the use of tools (like job aids) leading to more balanced and more powerful programs to enhance the transfer of training.

With regard to research on transfer of training the following points should be taken into account. First, the presented data show that job involvement and self-efficacy play an important role in explaining the effect of supervisory support. Therefore, these trainees' characteristics should be included in research designs. Secondly, the two projects where interventions were scheduled both consisted of small numbers of trainees. As a result of this, only non-parametric analyses were possible. Although research conditions are difficult to influence, new theoretical insights are only possible when larger numbers of subjects are involved in experiments. Larger numbers have the advantage that more advanced statistics can be computed and indirect links between support and transfer can be revealed.

Thirdly, the presented cases reveal supervisors and trainees assess similar variables differently. Therefore, it is worthwhile to collect data from both groups of participants.

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displayed in Table 1, the mean scores for transfer intentions (measured at the end of the program) were much higher than the scores of the variables that measured the actual transfer seven weeks after the training program. A comparison of the transfer intentions scores and the actual transfer scores revealed no significant differences between the two groups. A comparison of the actual transfer scores minus the scores for transfer intentions revealed no significant higher score for the experimental group.

Table 1. Characteristics of used variables

Variables[a]	Mean		alpha		#subjects		#items
Prior work behavior	3.24		.78		27		8
Transfer intentions (1) Actual transfer (2)	1	2	1	2	1	2	
-judgement situation	3.84	2.63	.65	.73	27	15	3
-decision making	3.95	2.66	.71	.93	27	15	5
-executing decision	3.56	2.47	.65	.90	27	15	4
-analyzing problem	3.86	2.72	.70	.83	27	15	3
Received supervisory support	2.21		.70		17		4
Provided supervisory support	2.65		.82		18		4

[a] all items were measured on five-point scales (1=low to 5=high)

The measurement of received supervisory support (trainees' scores) and of provided supervisory support (supervisors' scores) was carried out with identical items. These variables measure the support after the completion of the training program. As for the trainees' scores no significant difference was found between the experimental and the control group with regard to the supervisory support. However, the scores of the trainees' supervisors for their provided support showed that supervisors of the experimental group assessed their support higher (Mann-Whitney Test, mean rank 5.88 versus 12.40, two-tailed p .01).

Finally, Spearman correlations were computed to identify association between support and actual transfer. With exception of the relation between received supervisory support and decision making (R_s .69, p .01) no significant relations were found.

Case 2

Method. The setting for Nauta's study (1994) was a German bank where employees were involved in a training program 'Handling Complaining Clients'. The trainees that attended the program in March 1994 acted as the control condition (n=11), trainees that were involved in this program in April 1994 acted as the experimental condition (n=10). For the experimental group the following activities were scheduled:

- During training the trainees developed, with the assistance of the trainer, an action plan that addressed transfer intentions, barriers in the job situation and the transfer enhancement through supervisory support.
- At the same moment trainees' supervisors received a letter of the training department wherein was explained that their employees developed an action plan during the training program. Supervisors were asked to discuss this plan with their employees. A checklist with subjects for this discussion was enclosed, which corresponded with the subjects that the trainees outlined in their action plans.

Two questionnaires were used for data collection. Five weeks after the training trainees filled

in a questionnaire with regard to their discussion with the supervisor about the action plan and other supervisory support activities. Trainees' supervisors received an questionnaire with identical items about the discussion and their other supervisory support activities. Items were rated on yes/no scales mostly. Further trainees received a list with items that measured their handling clients' complains behavior before and after the training program. Identical items were used to measure this behavior at both points of time. These behavior items were measured with six-point scales.

Results. The experimental and the control group differed in their scores for prior work behavior. A higher score was found for the control group. However, a Mann-Whitney Test showed the difference was not significant. A comparison of the post-scores of both groups did not revealed differences. This was also the case for the comparison of the post-scores minus the pre-scores.

Table 2. Characteristics of prior and post work behavior

Variables	Mean	alpha	#subjects	#items
Prior work behavior	3.44	.87	17	9
Post work behavior	4.83	.67	17	9

With regard to supervisory activities after the training program some differences existed when one takes into account the trainees' scores. In the experimental group the duration of the discussion was significant longer. The average length in the experimental group was 22.8 minutes versus 7.3 minutes in the control group (Mann-Whitney Test, p .016). As mentioned before items with regard to the content of the discussion were measures with yes/no scales so the Fisher's Exact Test was used to compare both groups. This test revealed that in the experimental group more often discussions were held between trainee and supervisor with regard to whether the trainee new learned skills met the standards for helping complaining clients and also discussed more frequent in the experimental group was the topic of the nature of the support necessary to apply learned skills on-the-job.

However, when one takes into account the scores of the supervisors for the above mentioned items one would expect the same paterna. Hence, no significant differences between experimental and control group were found. Supervisors apparently assess the content of these discussions otherwise than their employees. Further, other differences between supervisors of the experimental and the control group existed with regard to the content of the discussion about the action plan. Supervisors that came from the experimental group more often discussed with their employees the barriers to apply learned skills and possible solutions (Fischer's Exact Test, one-tailed p .035) and they discussed more often the materials trainees used in the training program (Fischer's Exact Test, one-tailed p .01).

Case 3

Method. The purpose of the study of Gielen (1994) was to examine which factors can influence learning and performance before, during, and after the training program. The study was carried out in a large Dutch banking organization, where desk clerks were involved in a CAI on the legal aspects of their jobs. In a period of at least 3 months four measurements are completed, in which not only learning and performance were assessed, but also information on individual trainees' influencing factors (motivation to learn, job involvement, self-efficacy, perception of relevance) and work environment (support, feedback, opportunity to perform) was collected. The 'treatment' group (n=72) received all four measurements and the supervisor was asked to assess the performance of the trainees'; the comparison group (n=29) received only the second and fourth measurement. Data was gathered by means of tests (pretest, posttest, and transfer test) and questionnaires (four for the trainee and one for the supervisor).

Results. First the two groups were compared: it appeared that no significant differences were

Case 4

Method. Leeninga (1994) examined the effects of a training for approximately 400 mechanics in a public service corporation (energy). These mechanics worked in three different departments (eg. electricity, gas). The training consisted of two parts: part A was similar for all mechanics, part B was specific for each department (so three versions of part B occurred). The effects were measured on three levels: reaction, learning and behavior in a pre-post-post single group design. Furthermore information was gathered on variables like opportunity to perform, supervisory support, perception of relevance, and self-efficacy. For the data collection tests and questionnaires for the trainees, and a questionnaire for the supervisors were used. The supervisory support activities were evaluated in the transfer questionnaire. This transfer measurement took place seven weeks after the first posttest.

Results. The post test (maximum score of 100 points) revealed a learning effect for each group on aspects of part A and B. For part A the results of the transfer test showed that the degree of learning decrease, but not significantly. For part B the results showed that for group 2 and 3 a significant decrease ($p < .05$) was demonstrated on the transfer test; group 1 showed a slight increase on the transfer test, however, not significant. A influencing factor could maybe found in the degree the employees had the opportunity to perform in their work the tasks that were learned during training.

This opportunity to perform was measured separately for part A and B. For part A six tasks were identified, which were related to the training content. For each task the trainees were asked whether this tasks could be performed in the real work situation, and if not, why they were not able to perform. For the 11 relevant tasks in part B the same procedure is followed. The proportion of the mechanics that stated they could actually perform these tasks varied extensively. In Table 4 the minimum and maximum proportion for each group and for the total group for both parts are presented. This degree to which the trainees have had the opportunity to perform the tasks in their work situation can be an explaining factor for the loss of knowledge, which was measured with the posttest and the transfertest. In fact, the most important reason for not performing was, that these tasks did not occur in the work situation.

Table 4. Test results, and opportunity to perform for three groups of mechanics

	Group 1		Group 2		Group 3		Total
Posttest (1)							
Transfertest (2)	1	2	1	2	1	2	
Part A	59	58	61	56	66	55	
Part B	61.4	63*	57.6	43	61.6	36*	
Opportunity to perform							
Part A	19-61%		15-73%		59-91%		27-70%
Part B	59-81%		70-91%		64-77%		69-79%

*: difference between two tests significant on T-test ($p<.05$)

Consequently the supportive activities of the supervisor were examined. From the transfer questionnaire a 3-item scale for supervisory support was constructed. The internal consistency was measured and is acceptable (Cronbach's alpha .65, n=102). For the supervisors a similar support variable could not be constructed, because of the low response (n=10). The rated support scores were relatively low, with values between 2.5 and 3.0 (1= totally disagree, 5=totally agree). There was found a significant difference between group 1 and group 3 with regard to supervisory support (t 2.24, df 82, p .03). It appeared that mechanics from group 3 perceived that they received more support than their colleagues in group 1 (see Table 5 for exact values).

The trainees is asked what activities their supervisor has undertaken. These activities consisted of active and more passive (reactive) activities. For example, the supervisor could visit the work site, execute performance appraisals, or ask whether problems did occur during work in the past

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Transfer of Training: The Impact of Supervisory Support, Supervisory Involvement, Situational Constraints, and Self-Efficacy on the Application of Technical Skills Training

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Contemporary researchers have noted the need to delineate factors that promote long term transfer of training. Consequently, this study examined (a) supervisory support, supervisory involvement, situational constraints, and self-efficacy as factors that may expand the understanding of long term transfer of training. Although these factors did not significantly impact transfer of training at the Connecticut Department of Labor, several other organizational constraints, work group constraints, and individual constraints emerged as barriers to transfer.

Pressed by global competition, changing customer demands, and the rising costs of doing business, many companies are examining training expenditures to determine the actual return on their training investments (Carnevale, Gainer, & Villet, 1990; Georgenson, 1982; Gist, Bavetta, & Stevens, 1990). In fact, organizations in which training was traditionally defined as "the cost of doing business" or "an employee benefit with little bottom-line impact" have begun to re-define training as "an investment to improve productivity" (Broad & Newstrom, 1992). These organizations recognize that training should be linked to competitive business objectives and corresponding business strategies (Peery & Salem, 1993; Schuler & Jackson, 1987). In this context, Human Resource Development (HRD) departments enjoy increased visibility and are subjected to increased accountability.

The degree to which employees utilize the knowledge, skills, and behaviors learned during classroom training to improve job performance (i.e., transfer of training), however, is difficult to assess (Baldwin & Ford, 1988; Goldstein, 1986). Transfer of training research (Baldwin & Ford, 1988; Laker, 1990) to date has generally assessed only short-term transfer (e.g., self-report of the intention to use training content on the job). While studies have identified how much an individual knows upon completion of a training program, they have not identified how much of the new knowledge, skill, or behavior has been incorporated into daily work habits. In fact, few corporations understand how to utilize training to develop a highly skilled workforce (Sheckley, Lamdin, & Keeton, 1993) although continuous improvement of job skills is necessary to support high performance enterprises.

Corporations failing to explicate the connection between classroom learning and workplace application can anticipate productivity problems as they expand the responsibilities of individuals. In participative organizational climates, employees are increasingly expected to utilize knowledge, skills, and behaviors learned in the classroom to solve day-to-day work problems. This expectation implies an ability to apply knowledge, skills, and behavior to many contexts (Laker, 1990). Consequently, the gap between skills learned in the classroom and skills applied to improve job performance will widen without modification of current training practice. Organizations seeking to promote superior performance face a common problem: How to strengthen the transfer of classroom skills to the workplace.

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Transfer of Training

Transfer of training researchers (Baldwin & Ford, 1988; Laker, 1990; Porter & Lawler, 1990) have identified three factors that significantly enhance the probability of training transfer. These interdependent factors are: instructional content that provides the skills and knowledge to do a job, motivation to use the skills and knowledge learned in the classroom, and a work environment that supports the use of the newly acquired skills and knowledge. To illustrate the relationship among these three variables Huczynski and Lewis (1980) developed a transfer of training model to illustrate the interaction of course content, individual motivation, and the work environment. Their model identifies three distinct training phases: the pre-course phase characterized by the identification of the training need and the initiation of the motivation to engage in the learning process, the learning phase characterized by the delivery of materials to give participants skills so they can be more productive on the job, and the post-course phase characterized by the management of the work environment to promote transfer of knowledge, skills, and abilities learned in the classroom to work settings. To incorporate training strategies for the three phases of training, other researchers (Broad & Newstrom, 1992; Goff, Hastings, & Sheckley, 1992) suggest that organizations form transfer partnerships that include three key stakeholders: the trainee, the trainer, and the manager. Together, these partners work to support the long term workplace application of knowledge, skills, and abilities learned in the classroom.

In this training paradigm, on-the-job application of training is the major determinant of successful training. Training outcomes are measured with concrete examples of the integration of training concepts in daily work activities over time (Brinkerhoff & Gill, 1992; Silberman, 1990). The supervisor is the primary transfer agent following the formal classroom training. As the manager of the work environment the supervisor provides the structures, values, and systems that support transfer of training.

Supervisory Support. Because the supervisor's role is a critical component of skill transfer, a delineation of supervisory behaviors that are most instrumental in providing a work climate that encourages transfer of training is necessary for a thorough discussion of the transfer of training problem. As organizational leaders, supervisors tap needs, raise aspirations, shape values, and mobilize the potential of their employees (Burns, 1979). Specifically, researchers (Huczynski & Lewis, 1980; Jacobson, 1986) determined that effective supervisors provide situational supports (e.g., job autonomy, time to practice new skills) to meet learners' specific emotional, cognitive, and material needs. They create a climate conducive to transfer by: (a) articulating how the application of the new skills or knowledge relate to personal and organizational goals (Georgenson, 1982; Huczynski & Lewis, 1980; Senge, 1990); (b) aligning the workplace to the learning goals of the training program (Broad & Newstrom, 1992; Little, 1982; Quick, 1991); (c) giving training participants the time needed to practice the learned skills on the job without imposing normal deadlines during the post-course training phase (Huczynski & Lewis, 1980); and (d) modeling the desired skills (Bandura, 1986, 1989; House, 1968).

Situational Constraints. Effective supervisors also reduce the situational constraints or workplace barriers that limit the long term transfer of training. Researchers (Jacobson, 1986; Peters & O'Connor, 1980; Trost, 1985) suggest that the work environment is especially significant to transfer of training because many learners report more organizational barriers than organizational supports for learning new skills. In fact, Broad and Newstrom's (1992) review of the research literature determined that supervisors are the most significant contributors to a successful training program because they can reduce the three most significant barriers to transfer: (a) the lack of reinforcement on the job, (b) interference from the immediate work environment, and (c) a non-supportive organizational work climate.

Supervisory Involvement. In addition to supervisory support and situational constraints, theorists (Georgenson, 1982; House, 1968; Huczynski & Lewis, 1980; West, 1990) also promote supervisory involvement in the training process as critical to the long term success of training transfer. They contend that supervisors familiar with the training process are best

equipped to: (a) assist trainees with the development of action plans that provide opportunities to use the training material in the workplace during the learning phase of training (Broad & Newstrom, 1992); (b) make critical linkages between the training curriculum and the job application of skills during the learning phase of the training (Broad & Newstrom, 1992); and (c) provide informed feedback and advice during the training session (Marson & Bruff, 1992; Robinson, 1989).

Self-Efficacy. Supervisory success in managing the training process is mediated by the self-efficacy of the training participants. Self-efficacy, or an individual's judgment of "how well one can execute courses of action required to deal with prospective situations" (Bandura, 1982, p. 122), includes an estimate of ability, adaptability, creativity, and capacity to perform in a given situational context. Since self-efficacy is also related to performance (Frayne & Latham, 1987; Locke, Frederick, Lee & Bobko, 1984), the impact of supervisory support, supervisory involvement, and situational constraints in any given context is mediated by the interaction of these variables and the trainee's self-efficacy.

Methods and Procedures

This study was conducted at a large state agency in Connecticut utilizing a sample of 85 interviewers who conduct unemployment insurance claim interviews and job service interviews. The study was designed to examine (a) supervisory support, (b) situational constraints, (c) supervisory involvement in the training process, and (d) self-efficacy as factors that may expand the understanding of transfer of training. Specifically, data were gathered to determine: (a) the impact of supervisors' involvement in training on participants' test scores immediately following the training and two months later; and (b) the relative contribution of supervisory support, situational constraints, and self-efficacy on participants' test scores immediately following the training and two months later. All participants completed: a new claim interview, a job service registration, a questionnaire immediately following the training, and a questionnaire two months after the training.

Results

For the first two hypotheses of this study, speed and accuracy scores of the participants with training supervisors were compared to the speed and accuracy scores of the participants with non-training supervisors using ANOVA analyses. The results suggested that supervisory involvement impacted some test scores immediately following the training as well as some test scores two months later. In particular, supervisory involvement had a statistically significant impact on participants' error rates for Job Service posttest 1 ($F_{1, 83} = 4.2$ $p < .05$), participants' speed scores for Job Service posttest 1 ($F_{1, 83} = 6.3$ $p < .01$) and participants' speed scores for the Unemployment Insurance posttest 2 ($F_{1, 82} = 3.9$ $p < .05$).

Follow-up analyses were conducted to determine the existence of statistically significant relationships that might have modified the interpretation of these findings. The results of these follow-up analyses suggest that age as an alternate independent variable is positively correlated with Job Service posttest 1 error scores ($r = 0.25$, $p < .05$) as well as Unemployment Insurance posttest 2 speed scores ($r = 0.42$, $p < .05$). The significance of the differences between the group with training supervisors and the group with non-training supervisors disappeared for Job Service errors on posttest 1 and for Unemployment Insurance speed posttest 2 when the effects of age were included as a covariate in the analysis. Group differences for Job Service speed scores on posttest 1, however, remained significant with the effects of age covaried.

Two regression analyses examined the impact of supervisory support, situational constraints, and self-efficacy on test scores for hypothesis 3 and hypothesis 4. Surprisingly, the

combination of these three independent variables did not predict scores for either of the posttests. In fact, supervisory support, situational constraints, and self-efficacy combined to account for only a maximum of 13% of the variance in error scores and a maximum of 8% of the variance in speed scores.

Follow-up analyses to identify other variables that might combine with supervisory support, situational constraints, and self-efficacy to predict performance variance were conducted as well. Again, age emerged as an important variable. Specifically, the follow-up regression analysis for Job Service posttest 2 errors ($F_{overall} = 5.9$, $p < .01$) accounted for a total of 43% of the variance with age ($t + 3.8$, $p < .01$) and supervisory support ($t = -2.3$, $p < .05$) identified as significant variables. In addition, 22% of the variance for Unemployment Insurance posttest 2 speed ($F_{overall} = 3.56$, $p < .01$) was accounted for with the inclusion of age ($t = 3.2$, $p < .01$) as the only significant variable in the subsequent regression analysis. Overall, these results suggest that age is related to the errors made on Job Service posttest 2 and the speed for Unemployment Insurance posttest 2. The results also suggest that the original supervisory support variable becomes significant for Job Service posttest 2 errors when the effects of age are removed.

Overall, the results of the ANOVA procedures and the results of the regression analyses determined that the independent variables did not significantly impact performance as predicted. In fact, supervisory involvement was the only independent variable to significantly impact performance when age was included as a covariate. An understanding of the implications of these findings is necessary to refine long term transfer of training strategies for HRD professionals.

Discussion

Although a wide range of error scores and speed scores were expected in participants' performance on the Job Service and Unemployment Insurance posttests, the range of scores was limited and all participants unexpectedly passed the pre-determined performance standards for error scores and speed scores. The limited variability in scores may have contributed to the lack of significant results. In addition, the correlation defining the relationship between supervisory support and situational constraints ($r = 0.7$) was greater than anticipated. The relationship between these two variables suggests that supervisory support and situational constraints explained much of the same variance.

The analysis of the data identified several other factors that may have impacted the transfer of training. In particular, the organization's culture, the work group's norms, and the individual's attitude and behavior combined to mediate transfer of training efforts. Classroom and workplace distinctions emerged in these overriding themes.

Classroom Factors. Although little research has been conducted to test the impact of supervisory involvement on workplace performance, transfer of training literature suggests that individuals reporting to supervisors involved in the training will perform better than individuals reporting to supervisors not involved in the training because training supervisors: (1) are credible trainers due to technical expertise (Coffman, 1979, 1980; Quick, 1991), (2) will foster workplace application of the training during the training session (Georgenson, 1982; House, 1968; Huczynski & Lewis, 1980; West, 1990), and (3) will support the training with related activities in the pre-training and the post-training work environments (Broad & Newstrom, 1992; Taylor, 1992). The results of this study, however, suggest that the impact of the supervisory involvement variable is mediated by five factors not previously discussed in the transfer of training literature. First, the analysis of the results suggests that supervisors as trainers will be most credible if their technical skills are augmented by the presentation skills, the facilitation skills, and the communication skills required by trainers. Second, the self-efficacy determinations of training supervisors might influence the trainer's delivery of the course material. Instructors with high instruction self-efficacy will be more apt to design classroom learning to provide all participants

with the help they need to succeed than instructors with low instruction self-efficacy (Bandura, 1993). Third, supervisors as trainers may inhibit full participation of their direct reports in the classroom training more than they inhibit the participation of other employees due to employees' concerns for favorable assessments (Taylor, 1992). Fourth, encouraging voluntary attendance in training programs might alleviate some of the negativity expressed by participants while increasing goal commitment. Finally, goal commitment of the participants may be influenced by the perceived goal commitment of the training supervisors (Eisenberger, Huntington, Hutchinson, & Sowa, 1986). Since this research indicates that the specific influence of the teacher in transfer is minimal, factors related to the workplace itself might provide a more accurate explanation for the findings of this study.

Workplace Factors. This study expected the combination of supervisory support, situational constraints, and self-efficacy to explain a significant amount of the variance associated with Job Service and Unemployment Insurance error scores and speed scores. Instead, the variables combined to explain an average of 6% of the error scores and an average of 4% of the speed scores. Additionally, participants' mean scores indicated that supervisory support (e.g., providing time to practice new skills), the reduction of situational constraints (e.g., the lack of on-the-job reinforcement for skill usage), and participants' self-efficacy were only "moderately helpful" transfer strategies. These findings suggest that other workplace factors may have influenced the results.

Organizational Commitment. The first environmental constraint participants mentioned as an impediment to their transfer efforts was the lack of organizational commitment to the training process. This criticism indicates that sponsorship of the training by senior management was a crucial, missing link that might have hampered the transfer efforts of the training participants as well as the initiation of support behaviors by their supervisors. Participants reported that the failure of senior managers to explicitly communicate the responsibility, the authority, and the activity of all employees negatively impacted the transfer of this training which suggests that support for training needs to be consistent, visible, and articulated by all levels of management. In fact, this study contradicted previous research which suggested that the immediate supervisor could mediate the effects of a non-supportive work environment (Bennis & Nanus, 1985; Bradford & Cohen, 1984).

Work Group Factors. The second environmental constraint factor participants identified as an transfer impediment was the work group's reaction to the training. Participants believed that this training, designed to teach participants new job responsibilities, would significantly disrupt the operating procedures of their current work groups. Unsettled by these anticipated changes, participants retaliated as reluctant classroom learners. Participants' resistance persisted when they returned to work. The work group's beliefs about the organization (Reiss, 1980), the work group's beliefs about group members' social roles (Stryker & Statham, 1985), and the group members' beliefs about themselves (Swann, 1984) combined to dictate the level of acceptance for the training. Threatened, the work groups attempted to block the job changes by collectively resisting the training. These outcomes denote a powerful reciprocal relationship between work group and supervisor. In fact, the amount of transfer may vary according to the amount of work group resistance encountered by the immediate supervisor.

Individual Differences. Data from statistical analyses as well as personal statements from participants and their supervisors suggest that this study did not adequately explore the dimension of individual differences. Self-efficacy, operationally defined as the confidence in one's ability to complete Job Service and Unemployment tasks, did not explain performance differences. Instead, participants' performance anxiety and participants' chronological age emerged as the two salient individual differences.

Performance anxiety was often mentioned as a significant barrier to skill development for participants in this study. In general, individual differences in performance anxiety may be attributed in part to the social comparisons individuals use to determine their commitment to the

training process (Wills, 1991). Individuals reporting low levels of stress may have employed upward comparisons to foster performance improvement. In contrast, individuals reporting high levels of stress may have employed lateral comparisons and downward comparisons to maintain current performance levels. Participants' social comparisons most likely shape subsequent determinations to engage in behavior change. Individuals with high levels of anxiety would be most likely to reduce their anxiety with downward comparisons while individuals with low levels of anxiety would more readily engage in training transfer. Based on these findings, an understanding of the anxiety levels and the nature of social comparisons may be crucial to the initiation and maintenance of participants' transfer efforts.

Finally, age emerged as a statistically significant independent variable in the ANOVA results as well as the regression results. Specifically, this study determined that age is strongly related to job performance. Younger participants completed the performance tests in less time than the older participants. Younger participants also recorded fewer errors than the older participants supporting previous research that suggests that (a) psychomotor functions decrease with age (Elias, Elias, & Robbins, 1987; Giniger, Dispenzieri, & Eisenberg, 1983; Gist, Rosen, & Schwoerer, 1988) and (b) short term memory and learning ability decrease with age (Elias, Elias, & Robbins, 1987; Sterns & Doverspike, 1989). Results of this study further suggest that tests to measure fluid intelligence (Cattel, 1991), inattention to learning style differences (Ford, 1994), motivational strategies that appeal to only one segment of the population (Fossum, Paradise, & Robbins, 1989; Noe, 1986), computer phobia (Davis, 1989; Igbaria, Pavri, & Huff, 1989), and supervisory expectations (Siegel, 1993) may contribute to age distinctions which impede the long term transfer of training. These possible age distinctions if empirically validated have tremendous implications for the graying American workforce. In fact, 17 million of the workers in the labor force will be 55 by the year 2000. Failure to address age differences could result in severe economic losses as well as complaints of age discrimination. Strategies that draw on the accumulated knowledge of older workers should be designed to ensure the engagement of all workers in a continuous learning environment.

Strategic Quality Training Model

Based on the results of this study a Strategic Quality Training model (Hastings, 1994) (Figure 1) has been designed to integrate the principles of transfer of training research with the core principles of the total quality movement (TQM) (i.e., customer service, leadership, skill development, and measurement) to support the continuous improvement of core business activities. To minimize the impact of organizational constraints (e.g., differences in managers' behaviors, differences in managers' goals), work group constraints (e.g., differences in commitment of work groups, differences in goals of work groups), and individual constraints (e.g., age, anxiety) the proposed transfer of training model involves all levels of the organization in the three phases of training. Lastly, the model supports the reliance on HRD staff to facilitate the training process to promote a comprehensive training process.

The Strategic Quality Training model utilizes a six step process. First, a needs assessment is conducted to assess training needs related to the organization's mission. The gap between present skill level and the required skill level are identified and training objectives and corresponding performance goals are established. Next training is designed to establish a formal link between training activities and the work environment. Specifically, two kinds of training curriculum are designed. The first kind of training, *task training*, is designed to build specific skills (e.g., customer service skills) that are needed by employees. The second kind of training, *leadership training*, (e.g., coaching and mentoring training) is designed to build specific support

skills needed by supervisors and managers who are responsible for promoting the long term application of the training. Corresponding evaluations are also designed to measure reactions to the training, the learning, the behavior change, and the organizational results that occur because of the training intervention.

The next step in the model is the delivery of the training (on-the-job training as well as classroom training) and the administration of evaluations to determine participants' reactions to the training and participants' learning. These evaluations are used to determine the short term transfer of training. Fourth, the application of the training (the most significant part of the training process) takes place in the work environment. Task training learners practice using their new skills while their supervisors practice using new leadership skills. After training participants have had time to assimilate the new skills (a minimum of three months), evaluations to measure long term transfer (behavior change and organizational results) are administered. Based on the results of these evaluations, modification of the training design and new training goals are defined. In the final step continuous improvement is supported with a re-examination of the needs assessment process.

In summary, the utilization of this Strategic Quality Training model facilitates learning for all members of an organization while promoting the continuous transformation of the organization itself. Specifically, effective implementation of this model involves key stakeholders (the trainee, the trainee's supervisor, and the trainer) in the design of work-related training to build commitment to the training process. Supervisors and senior managers are also trained to provide appropriate support for each training initiative. In addition, evaluation of the training process is required to document short term transfer, long term transfer, and organizational improvements. Overall, the utilization of this training model promotes skill initiation and skill maintenance behaviors by: (a) integrating training and the organization's strategic mission and goals, (b) building partnerships with management and line staff, (c) measuring and documenting training effectiveness, and (d) promoting strategies to incorporate training into work practice.

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Factors in the Organizational Climate that Motivate the Trainee to Transfer Behavior Learned in a Training Setting to the Actual Work Environment.

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The relationship between transfer behavior motivation and the organizational climate is examined in this paper. Several motivational factors were examined and mapped to an individual's need in the work environment. The ideal organizational climate will recognize these employee needs and provide individuals with the tools and support required for maximization of skills transfer, resulting in a greater rate of return on investment dollars used for training..

Every activity is critical to maximizing the return on investment for training. This means to be effective, learning must generalize into targeted areas of the company (Ulrich, Jick, & Von Glinow, 1993). This paper will look at the factors surrounding training design that motivate learners to apply new abilities or behaviors in the work place.

Motivation to learn content and then apply it to the job task is critical to training impact. Without motivation to learn, the most sophisticated training program cannot be effective (Clark, Dobbins, & Ladd, 1993). Identifying factors that foster such motivation enhances the transfer of learning that is important to the organization interested in growth, investment in resources, and revitalizing, maintaining, or enhancing creativity in the work place.

Training is efficient when it makes workers more effective in less time or with less money. This can be enhanced when the training is clearly identified with the organization's goals and with individuals tasks which are intended to achieve these goals. Adult educators and participants must be clear as to which behaviors are expected to change and why. Barriers or inhibitors to effective transfer of learning must be determined before the training program begins (Ford, 1994).

Who and Why

There are people beyond the participant who will be 'paying a price' to have trainees attend a learning experience (Swanson & Nijhof, 1994). It is essential to discover how behaviors that these people anticipate occurring from the training will match the organizational's need for these skills. These stakeholders have the greatest interest in providing a motivation enhancing climate that will allow for the maximization of transfer of learning.

Without motivation to transfer learning to task environments, the most sophisticated training program cannot be effective (Clark, Dobbins, & Ladd, 1993). The ability to see the 'big picture' enables the learner to see how their training experience fits into the overall scheme of events within the total transfer environment (Kiener, 1994).

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Many studies have analyzed what contributes to the employee motivation to transfer the learned behaviors to the work environment. These contributing factors include the instructional approach used in training, the personal investment, self-efficacy, and the organization climate. The organization climate includes support from the work place, policies, tools provided on the job, and the use of mentorship.

Instructional Approaches

Among the instructional approaches to education that were reviewed, the experiential approach was documented as the most effective (Fleming, 1992). The experiential instructional approach emphasizes active learning in simulated or actual work situations. Although it holds the greatest potential for promoting generalized skill development, refinements are needed. Ensuring that the experience is truly transferable to the work environment requires thorough evaluation. Is psychological realism ensured through ongoing field experience? For example, the content and pace of instruction need to be sufficiently flexible to accommodate individual needs, practice, analysis, and self critique in the safety of the classroom. Providing quality trainers and support are related investments that the organization must be willing to make.

Organized learner content strategies is another way to facilitate transfer (Nolan, 1994). In this model, trainees perform individual or small group research. They meet, express, and listen to other view points. The dialogue allows them to broaden their prospectus on issues and solidify their learning. Discussions that address the successes and failures of others allows them to learn how to problem solve in multiple situations.

Personal Investment

Expectancy theory suggests that trainees are unlikely to be motivated to learn unless they believe that training will result in either improved job performance or career advancement (Clark, Dobbins, & Ladd, 1993). Training motivation stems from the belief that training will result in job utility (higher job performance) or career utility (promotion opportunities). If the employee sees no benefit for personal growth, motivation will not be high.

A related influential variable in transfer motivation is the learner's involvement in the decision to participate in training. Voluntary rather than required participation in training is associated with stronger beliefs that the learning is appropriate, evokes commitment to the training experience, and increases satisfaction with training. Subjects who were able to attend training that they had requested reported higher motivation to learn than did subjects who were not assigned to training that they had selected (Clark, Dobbins, & Ladd, 1993). This need for self-initiated education is frequently facilitated by developing a Individual Education Plan (IEP) with each employee. This enhances employee confidence that they play an active role in developing their educational experience in the organization.

The credibility of the individual that recommends training, along with the supervisor's and group's support for training validates the experience and encourages transfer of learning. If the person recommending training is well respected and exhibits behaviors grounded in the training, learners are more highly motivated and committed to complete the training and use it in the work environment.

Self-efficacy

An individual's ability is often related to the amount learned in training. Self-efficacy has an impact on the employee's motivation to transfer behavior. It is fundamental to success in applying learning to work. Individuals with high self-efficacy are more likely to be active in

applying trained tasks and attempting more difficult and complex tasks on the job (Ford, Quinones, Sego, & Sorra, 1992).

The most valuable reward comes to participants when they see themselves doing something useful that they were unable to do before. Suggestion or verbal persuasion is widely used in increasing perceptions of self-efficacy because it is easy, inexpensive and readily available. Participants expect success when they are in comfortable, relaxed environments, free from stress and annoyance (Carroll, 1993). It is these expectations that will become realized processes.

Organizational Climate

Richey (1990) researched organizational climate factors that influenced the degree to which employees were motivated to apply learned behaviors in the work environment. The factors that motivate employees to use new skills and behaviors on the job are support from the work place, policies, tools provided on the job, and the availability of a mentor.

A positive organizational climate exists where each employee feels that they are contributing and influencing the success of the company. New behavior must come into contact with positive consequences in the transfer setting, as well as the reinforcement of generalizing new skills to other areas of business. An organization built on the assumption and values of self-actualization of its individuals will have a climate conducive to maintaining the motivation of the learner.

Support

Trainees should encounter little difficulty in applying what they have learned. The work environment needs to provide physical or human resources, support from colleagues for new ways of performing work roles, and norms or values within the system of application of training (Fox, 1994). The organization is responsible to support the efforts and expenses of the training endeavor. Trainees believing that they are supported from peers or supervisors in using their new skills will be motivated to learn during training. Recognition that training is beneficial because of the ability to transfer skills to the job is imperative. A supportive, open climate facilitates in communication (Rainey, 1983), allowing the trainee to fit easily into the organization.

The management style and climate set by a trainee's supervisor can hinder transfer of training. Managers create a work environment that fosters individual motivation. Sharing vision and values allows motivation to thrive and communicates to the trainee trust and belonging. Endorsing continuing education relays the important role that education plays in the organization. Remaining current with tools and training is essential in keeping the environment vitalized (Ranade & Clark, 1992) and the employee valued.

Supervisors need to be certain that they do not resist change or block innovation that comes from training programs (Clark, Dobbins, & Ladd, 1993) by allowing experimentation with new ideas and skills. Soliciting input on program content and design from supervisors includes them in the training process both physically and emotionally. Familiarizing supervisors with the program requirements in conjuncture with the benefits and expected outcomes, and enlisting their assistance in collecting evaluation data from the program can enhance their commitment to the shared success of the transfer of learning (Willard, 1992).

When people work in a positive atmosphere and have harmonious relationships with each other, motivation seems to take care of itself (Lau, 1992). Having co-workers and trainees meet before and after training establishes relationships and allows the trainee a sense of belonging to the group and organization. Involving the co-workers in the training process by familiarizing co-workers with outcomes and benefits of the program cements both the learning experience and the relationship with the trainee.

Policies

Modifying organizational systems to support newly learned behaviors plays a key role in the transfer of learning process. Training outcomes need to be aligned with the values and culture of the organization (Willard, 1992). Eliminating policies or procedures which discourage performance of training behaviors is essential. Implementing a reward or incentive policy encourages application of the behavior.

Managerial responsibilities include setting the long-term commitment to implementation, recognizing that employees will learn the technology at different rates, accepting that mistakes will be made, and remaining actively involved in the training process (O'Connell, 1990). Management must take an active role in the education of their resources to set the tone and bring together corporate wide policies regarding effective training resulting in high transference of behavior.

Tools

Instructional materials designed well encourage transfer. Required equipment or materials need to be available to the trainee. Job aids incorporated into the design of the work environment supplement and reinforce training. Trainees also benefit from having a quick reference guide. Activities started in the training environment can be completed on the job, allowing immediate application of the skill.

Mentorship

Employing a mentor to provide guidance, reinforcement, and feedback to the trainee reinforces learned behaviors. Getting the learning experience close to the actual physical workplace fosters the application of skills and increases the transfer of training (Stuart, 1992). This ensures that the trainee is performing the tasks correctly and efficiently, and gives the learner a supportive environment in which to perform.

Tutors help students apply newly acquired learning in order to facilitate training effectiveness. Tutors must think in terms of organizational outcomes, help trainees acquire training transfer agent skills, evaluate the outcomes of intervention strategies, and acquire an extend repertoire of professional training techniques (Huczynski, 1989). All these skills will lend credibility and respect to the tutor, creating an opportunity for growth of motivation within the trainee.

Coaching is a powerful, cost-effective strategy for polishing new behaviors and filling in voids left by instructional programs (Cheek, 1994). It builds an essential bond between team members and encourages effective information flow, cementing learned behavior.

Opportunity to perform

The opportunity to perform trained tasks on the job affects the transfer of skills. Being assigned appropriate tasks and work experiences relevant to the job (Ford, Quinones, Sego, & Sorra, 1992) enables the trainee to apply learned skills.

Factors affecting the opportunity to perform include the goals of the assigned department of an organization, supervisory attitudes towards the trainee, work group support, and the pace of the work flow. An unsupportive environment may result in an individual only performing easy tasks or not performing trained tasks very often (Ford, Quinones, Sego, & Sorra, 1992). Supervisor's perceptions of the trainee's capability, skills, and likability also influence the opportunity to perform trained tasks. The work group needs information on how to support trainees and supervisors need training on mentoring and developing innovative work assignment

procedures for newcomers (Ford, Quinones, Sego, & Sorra, 1992). Applying new skills is essential to completing the training process and successes.

Results

There is much that can be done within the organizational climate to foster employee motivation to transfer learned skills and behaviors into the work place. Table 1 shows the relationship between the motivational factors and the individual's need with possible systems action that would meet the need and motivate the trainee to transfer learned behaviors.

Table 1. Motivational Factors and the Domain of Influence

Motivational Factor	Individual Need	System Action
Instructional Approach	* Experiential - trainee applies knowledge * Organized learner content strategies - trainee performs small group research	* Provide situational experience * Reinforce small group research practices in teams on the job
Personal Investment	* Improved job performance * Career advancement * Involvement in education	* Benefits to organization - improved performance of employee, promotable staff, employee investment in education
Self efficacy	* High application of training * Complete complex job tasks	* Provide suggestions and verbal persuasion to increase self-efficacy * Inexpensive, easy, readily available
Organizational Climate	* Supportive environment from co-workers and supervisors * Policies accepting of learned behavior * Tools enabling accomplishment of job tasks * Availability of mentor	* Reinforce new behaviors and skills * Organizational commitment to training * Provide equipment, materials, and job aids * Provide tutors and coaches for guidance and reinforcement

Table 1 illustrates that the instructional approach of the training plays a major role in how the learner may incorporate the knowledge into new behaviors. By using an experiential approach, the trainee can actually try out new behaviors to see how they influence a situation. This approach solidifies learning and can benefit the organization by having the experience be one that supplies benefit to the company. Small group sessions reinforces a team situation that may be practiced in the organization.

Employees are motivated when they feel that their training is providing a personal benefit to them, such as improved job performance, salary advancement, promotions, or an involvement in

their future education. This is also a benefit to the organization as they have a more productive, motivated, and creative employee.

Self-efficacy has an impact on the employee's motivation to practice learned behaviors in the work environment. When employees see themselves as having worth to a company, they will in turn strive for high application of their learning to their job by attempting complex job tasks. The organization can encourage this further by providing timely and accurate verbal praise or other rewards.

Finally, support from peers and managers by accepting new behaviors will reinforce those behaviors and skills in the work place. This also demonstrates the commitment of the company to continuing education. By having the necessary tools and equipment, the enthusiasm of the trainees can be enhanced. Mentors also provide continued support to the new trainee who is trying to apply new knowledge and skills to the job.

The implications this has for the HRD practitioner is great as it suggests that the learning responsibility must be shared by the trainee and the organization. While the learner has the responsibility to acquire the content education, maintaining motivation to apply those skills in the job requires a supportive environment. An ideal environment is one that not only supplies the employee with the necessary tools but with support from co-workers and supervisors for new behaviors and assistance in the generalization of skills. The HRD practitioner must keep in mind the web of support needed by the trainee, along with the involvement of the employee in the planning process to ensure success of the training endeavor.

Keeping in mind the factors that motivate, along with employee needs, is an important step in maximizing the return on investment for training. Maximizing the use of education dollars requires looking not only at the training program but also the culture in which the training will be transferred. When an appropriate training program is combined with a supportive environment, trainee motivation to use new skills or behaviors on the job will be magnified.

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Management Influence on the Transfer of Training

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Recent reviews of literature on training indicate that the supervisor was found to be the most important factor in training transfer. Therefore an experimental study was conducted in order to judge the effectiveness of the supervisors' support. Trainees were assigned to a control and an experimental group. Supervisors of the trainees from the experimental group were requested to guide their trainee before, during and after the training. Data were collected by means of questionnaires and a set of semi-structured interviews. Surprisingly, the results showed that the use of the training did not differ significantly across the two groups.

Ever observed a group of trainees a month or two after they emerged a training program? Are the skills they learned in class being used on the job? Whatever is learned on a training, however much and however useful it is, the problem still exists of transferring the training back to the workplace. Trainees go back to work and do it the way they have always done it instead of the way they were taught to do it. This phenomenon is called transfer failure.

Recent published estimates indicate that only 10 percent of the dollars spent on training results in actual behavioral change back on trainees' jobs (Baldwin & Ford, 1988; Simons, 1990). Why does training fail to transfer? Much research in the past was carried out on the training itself. Trainees were questioned on the content of the training, the teaching methods, the training design and so on. In recent years research has taken a broader and more organizationally oriented perspective (Gradous, 1991).

The aim of this study was to focus on the organizational variables with emphasis on the trainees' boss, the supervisor. Authors such as Philips (1990), Beaudin (1987), Robinson and Robinson (1989) have concluded that managers can increase the impact of training dramatically. However, despite the importance of the subject, relatively little empirical work has been done on this topic (Branderhorst, 1993). In order to provide empirically grounded data for the debate on the influence of managers on the transfer of training, a small scale experimental study was conducted, the results of which are reported in this paper.

Management Actions to Support Training

Before discussing the study it is appropriate to discuss what is considered to be the ideal management support. Many references are found in the literature to specific management actions - before, during and after training - to support the full utilization of training on the job (Broad, 1980; Claas, Pouwer & Thijssen, 1986; Preskill, 1993; Zemke & Gunkler, 1985). The listed actions were rated important by several authors. As shown in table 1 these actions fall into three categories : management support by top managers, middle managers and first-line managers, or supervisors.

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Table 1: The management actions to support transfer of training

	Support before training	*Support during training*	*Support after training*
Top management	Rewarding training involvement. Participates in design of training program. Authorizes changed work hours to allow participation in training. Recognizing and rewarding management actions to support transfer. Provides appropriate physical facilities for training program.	Participates in one or more training sessions. Recognizing and rewarding management actions to support transfer.	Has conferences with trainees back on the job. Recognizing and rewarding management actions to support transfer.
Middle management	Arranges experienced co-workers to help trainee as needed. Participates in development of instructional objectives for training. Knowing the content of the training. Selects trainees according to established criteria. Arranges short period between training and the work environment. Recognizing and rewarding supervisors to stimulate transfer of training. Briefing supervisors and trainees on training program.	Recognizing and rewarding supervisors to stimulate transfer of training.	Recognizing and rewarding supervisors to stimulate transfer of training.

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First-line management	Provides time for pre-course assignments. Prepares co-workers for trainees' arrival. Issues statement on new performance level expected following training. Discuss with trainees the reasons for selection, the content and the ways to apply it. Knowing the content of the training. Contributes to development of criteria for selecting employees. Participates in design of training program. Sign an agreement which spells out what the trainee and his boss will do to make the training beneficial.	Arranges to prevent work-related interruptions of trainees during training. Arranges to have trainees' work covered during training period. Participates in one or more training sessions. Develops opportunities for trainees to use new behaviours immediately on the job.	Has regular conferences with trainees back on job to plan use of new skills. Gives positive reinforcement for desired trainee performance. Serve as a role model for the proper use of the training. Pair trainee with a mentor for support and reinforcement. Prevents overload of work. Listen to new ideas and allow experimentation. Gives trainees the responsibility for their own work. Gives trainees clear and consistent assignments.

When the actions of the top, middle and first-line managers are compared, clear differences appear. Let's begin with the role of the top management. Top management support appears to be most important before the training. These actions include top management participation in training, allocation of resources for training and rewarding
people following a training. Furthermore, they can encourage other managers to get involved in the development and transfer of training. By recognizing and rewarding training involvement they stimulate others to support transfer of training.

Middle managers can also encourage their supervisors to stimulate transfer of training. However, relatively little work has been done on this topic. The actions for middle managers are limited, only 4 authors describe them (Claas et. al., 1986; Verhaak, Claas & Vreeswijk, 1992).

The trainee's boss, the supervisor was found to be the most important factor in training transfer (o.a. Ameel, 1992; Georgenson, 1982; Huczynski & Lewis, 1980; Zemke & Gunkler, 1985). Before and after the training they need to create conditions in which trainees can apply the learning they acquire on training to their worksituation. Before the training starts they can prepare trainees, for example by having conferences with them on reasons for selection, on performance expectations and on the content of the training (Broad, 1980; Grace & Straub, 1991). After the training they can provide ongoing reinforcement on the job for use of new behaviours learned during training. They can approve individual conferences with trainees back on the job, give regularly feedback, provide opportunities to use new skills and reward desired trainee performance.

The Study

The aim of the present study was to measure the effects of actions of supervisors to support transfer of training. This is because most of the facilitating factors were related to the supervisor (as shown in table 1). Furthermore, recent reviews of the literature on training indicate that this has seldom

received empirical attention.

The following actions for supervisors appears to be mentioned by several authors (Ameel, 1992; Broad, 1980; Grace & Straub, 1990; Friedman, 1990):

- to set up a pre and post conference with the trainee to discuss use of new behaviours;
- to participate in assessment of training needs and objectives;
- to sign a contract which spells out what the supervisor and the trainee will do in order to apply new behaviours;
- to know the content of the training;
- to model behaviour by using the skills learned (to serve as a role model for the proper use of the skills);
- to provide opportunities to use and demonstrate new skills;
- to give positive reinforcement and rewards for desired trainee performance;
- to give support and feedback and help trainee as needed back on the job.

It is likely that the above-mentioned actions will increase the use of training on the job but, as said, there is a lack of empirical studies measuring the effectiveness of these actions. Therefore an in-house training of a dutch oil company was selected in order to judge the effectiveness of first-line management support before, during and after the training. The training chosen for investigation was a five-day one with a follow-up session after two months. The training program had been operating for several years. Reaction questionnaires returned by trainees over the years indicated that they enjoyed the training and saw enough opportunities to use new behaviours immediately on the job. During the training people learn how they can improve their problem-solving and decision-making skills. The teaching approach involves lectures, exercises, and handling situations directly related to the work of the trainees.

In order to ensure supervisors with a strong involvement and commitment in pursuing the transfer of training, the following instruments were developed:

- a worksheet with possible learning points for the trainee;
- an abstract of the training content for the supervisor; and
- a checklist with an overview of the actions to support transfer of training.

Worksheet An important action of the supervisor is to confer with his trainee on reasons for training and expectations following training. To support this meetings trainees and their supervisors received a list of goals, adapted from the training's learning points. They were first asked to select relevant goals to be achieved during the training. After the training the trainees were asked to consider their goals and to reduce it, in collaboration with their supervisor to more specific goals to be achieved in the coming weeks. Furthermore, they identified strategies for the supervisor to facilitate the application of their skills. An abbreviate example of this type of worksheet is shown in figure 1.

Abstract Knowing the content of the training is an effective technique to ensure management reinforcement for the training. It is important that the supervisors of the trainees attend the training first. This will help defuse the typical comment too often heard in programs: "My boss should be here for this" (Philips, 1990). This management attendance will enable the supervisor to review the training material and experience the program in the same way as the trainees. Unfortunately, this was not feasible. Therefore the supervisors received a tangible abstract of the program. Included in the abstract were an explanation of the theory, the instructional objectives, examples and exercises.

Figure 1: Worksheet with some learning points

	Before the training *Determine learning points*	*After the training* *Evaluate learning points*	
During the training I will learn:	Relevant to be achieved during the training?	Relevant to be worked on after the training?	Necessary assistance of my boss:
assess the relevant characteristics of my work-setting.	yes / no	yes / no	....
make a project-plan.	yes / no	yes / no	....
.....	yes / no	yes / no	....
.....	yes / no	yes / no	....

Checklist The supervisors were also given a checklist presenting an overview of relevant support actions (table 2 shows a few of these actions). The checklist could serve as a reminder. Supervisors got a overview of the actions they have to take before, during and after the training. Most of these actions are lead away from the worksheet with the exception of one. During the training supervisors have to inform co-workers about the training so that they can give reinforcement. In a cooperative environment trainees will sooner use the skills and show others how to utilize the skills to get the desired results.

Table 2: Checklist with a few of the actions for supervisors

	Management actions
Before the training	Discuss the training with the training-department.
	Study the abstract.
	Set up a conference with the trainee.
	Fill in the worksheet.
During the training	Inform co-workers.
	Develop opportunities for trainees to use new behaviours.
	Return the filled-in worksheet.
After the training	Set up a conference with the trainee.
	Fill in the worksheet.
	Return the filled-in worksheet.
	Plan another conference with the trainee.

Table 3 summarizes the instruments presented in this paragraph. Each type of instrument is listed with the management actions to support transfer of training. The assessment of the training needs and objectives was outside the scope of the investigation because they were already laid down.

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Table 3: The instruments with management actions to support transfer

	Management actions
Worksheet	Set up a pre and post conference with the trainee. Sign a contract which spells out the responsibilities. Provide opportunities to use new skills. Give support and feedback.
Abstract	Know the content of the training. Serve as a role model.
Checklist	Sign a contract which spells out the responsibilities. Give positive reinforcement and rewards.

Research Design

Research must aim to provide results which are relatively unambiguous and amenable to causal interpretations. For this reason this research design includes before- and after measurements, random assignment of subjects and the use of a control group (Brook, Shouksmith & Brook, 1984).

The research design consisted of a comparison of two groups of trainees. All trainees attended the selected training whose aim was to improve their problem-solving and decision making skills. The trainees were ad random assigned to a control and an experimental group, each consisted of fifteen trainees. Supervisors of the trainees from the experimental group were requested to guide their trainee before, during and after the training as opposed to the supervisors of the trainees from the control group.

The study was designed to determine whether the behavior of supervisors influences the transfer of training. One would expect that supervisory guidance stimulates trainees to use the knowledge and skills of the training in their worksituation.

To make the training pay off, it appears to be important to invest in developing management support for transfer of training (Branderhorst, 1993). So the training-department assisted the supervisors from the experimental group. Before the training a meeting with these supervisors was scheduled. During this meeting the above-mentioned management actions to support transfer of training, like informing co-workers and having individual conferences with the trainee, were discussed. Furthermore, the supervisors had to return the filled-in worksheets with learning goals so that the training-department could check whether the actions actually happened.

Data Collection

Data were collected by means of three questionnaires distributed to and completed by all training participants before, at the end of the training and two months after the training. For the three measures the same items were used to assess subjects' reactions. At the start of the training trainees were asked to fill in on a five-point frequency scale to what extent they already mastered the learning points from the training program. The second questionnaire was completed immediately following the conclusion of the training. It sought their opinion of the ability to use the training program in practice. The third and final questionnaire was sent out two months after the end of the training. It measured the application of the training within the trainees' normal work-environment. The alpha coefficients for the three questionnaires are presented in table 4.

Table 4: The alpha coefficients for the three questionnaires

	Alpha
Questionnaire 1	0.69
Questionnaire 2	0.81
Questionnaire 3	0.98

A set of semi-structured interviews were also carried out with a sample of trainees and supervisors to obtain more detailed information than would otherwise be possible through the exclusive use of questionnaires. During the interviews they were asked for information concerning the obstacles to change encountered on the job after training, the applicability of the material, the instruments and the management actions to support transfer of training.

Results

The data were statistically handled by means of the Mann-Whitney test. Table 5 presents means, standard deviations for the three questionnaires. In brackets are the results corrected for the pre-training information. The discrepancy between the pre-training and post-training scores were an estimate of the amount of behaviourial change appraised by the subjects themselves.

Table 5: Means and standard deviations for the questionnaires

	Questionnaire 1		*Questionnaire 2*		*Questionnaire 3*	
	M	SD	M	SD	M	SD
Contr.	3.27	0.52	3.87(0.60)	0.37(0.56)	2.75(0.42)	1.06(1.06)
Exp.	2.94	0.49	3.74(0.80)	0.52(0.60)	2.51(0.43)	0.68(0.81)

The results of the immediate post-training questionnaire had showed that the intentions of the subjects of the control and the experimental group differ but the difference is not significant (Z ($N=30$)= -0.92, $p<0.01$). The subjects of the experimental group believed that they would use the training a little bit more. However, after two months the use of the training program did not differ significantly across the two groups (Z ($N=30$)= -0.83, $p<0.01$). Both groups applicated the training program in their work situation in the same degree.

Over the years several authors have emphasized the role of the supervisor to facilitate the application of new learned skills & knowledge. However, the management actions to support transfer of training were not found to be significantly related to behavioral changes at work. The results of the interviews indicate that both groups saw the importance of support from the supervisor. Furthermore, they showed that the actions to stimulate the transfer were carried out by the supervisors from the experimental group and not by the other supervisors. Surprisingly, the data from this investigation suggest that the supervisor can not influence the transfer of training. Are there explanations for these results of this study?

Discussion

The results of the interviews have given a number of reasons which may explain the apparent failure of the actions of supervisors.

First, for most of the trainees rapid changes in the organization have adversely affected the applicability of the training. Pressure of work, a new supervisor, changing co-workers, as a result of reorganizations, were obstacles to use the new learned knowledge and skills. On the other hand, it is highly questionable whether the trainees and supervisors will use respectively support the training results more without these reorganizations. Moreover, the findings, as shown in table 1, suggest the main influence of the top and middle managers in the phases before, during and after the training. They have to recognize and reward management actions to support transfer. However, in this study this was not the case. It seems plausible that this will inhibit supervisors to support transfer of training.

An other explanation could be derived from table 3. It showed that the assessment of the training needs and objectives was outside the scope of the investigation. They were already laid down, but without the help of the supervisors. A meeting at with the training needs are identified with managers seems critical for transfer of training. Only training subjects lead away from the needs of the people in the normal work-environment, can be incorporated into the structure and processes of an organization. No participation of managers in the assessment of training needs can have a negative influence on the use of skills absorbed by the trainee in training (because they have to learn things they do not need).

Finally the assistance of the training-department seemed to be insufficient. They had a meeting with the supervisors from the experimental group about the support actions and instruments. However, the supervisors did not seem to influence the transfer of training. The supervisors' behaviour might drop back to the familiar old way of behaviour with no attention for transfer of training. More support and incentives appeared to be necessary. For example, a management reinforcement workshop could be an effective technique to ensure management reinforcement for a training. This program can be conducted for supervisors of the participants in a training program. The primary focus of the workshop is to teach these supervisors how to reinforce the behaviour taught in a training program.

Conclusion

A great number of management actions have suggested in the literature to provide support for the full utilization of training. However, this will not guarantee that behaviors learned in training are applied on the job. Even if their is general agreement among supervisors and trainees that these supporting actions are of high importance.

The present study indicates that many factors exert an impedient influence on transfer of training and the role of the supervisor. So appeared a lack of tangible support from the top and middle management a barrier for transfer of training. Procedures and policies to recognize and reward management actions to support transfer seemed to be facilitating. Further research is clearly needed on the role of the supervisor in connection with the actions of the top and middle managers.

Finally, the training-department have the responsibility to educate supervisors and make them aware of the impact of the work-environment on skills trainees learn in a training program. The results of this study show that almost all of the management support actions must be initiated and stimulated by HRD-practitioners. They have to take a very active role in coaching the supervisors and bring them into the training process as active partners. There is a lot of talk about gaining management support for training but none of this happened without the training-department taking the initiative and offering managers avenues to participate.

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